

RECEIVED #14

JUN 20 1995

GROUP 1100

EXPEDITED PROCEDURE
UNDER 37 C.F.R. § 1.116
HAND-CARRY TO GROUP 1100
ATTN: EXAMINER PAL

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Fumio ABE et al.

Group Art Unit: 1106

Serial No.: 08/067,275 ✓

Examiner: Pal, A.

Filed: May 26, 1993 ✓

For: HEATER AND CATALYTIC CONVERTER ✓

REQUEST FOR RECONSIDERATION

Assistant Commissioner for Patents
Washington, D. C. 20231

Sir:

In response to the Office Action mailed January 20, 1995, reconsideration and withdrawal of the rejection asserted therein is respectfully requested for the following reasons.

Claims 1-6 and 11-12 were rejected under § 102(e)/§ 103 over Inoue et al. or JP '061. This rejection is respectfully traversed for the following reasons.

Inoue et al. disclose catalytically active zeolites for cleaning exhaust gas. The disclosed zeolites have an $\text{SiO}_2/\text{Al}_2\text{O}_3$ ratio within a range of about 20 to 100, and are ion exchanged with noble metals (see column 3, lines 13-17 of Inoue et al.). The zeolite, after ion exchange, is pelletized with any number of natural clays or inorganic compounds. After the pellets are formed

they are calcined. The PTO has considered the various inorganic compounds described by Inoue et al. to be heat-resistant oxides. However, the inorganic compounds of Inoue et al. are not loaded with a noble metal. The inorganic compounds of Inoue et al. (e.g., alumina, silica, magnesia) are pelletized with the aluminosilicate after the aluminosilicate is ion exchanged with a noble metal. Therefore, the noble metals are not ion exchanged with or otherwise loaded on the inorganic oxides. Accordingly, the PTO's reliance on Inoue et al. is clearly misplaced.

The disclosure of JP '061 essentially parallels that of Inoue et al., and also fails to disclose a heat-resistant oxide loaded with a noble metal. For the benefit of the PTO, an English-language translation of JP '061 is attached hereto. JP '061 teaches preparing a slurry of zeolite, silica sol, alumina sol and water. The slurry is coated on a carrier (e.g., honeycomb structure), and the carrier is then fired. Thereafter, the zeolite is ion exchanged with a metal catalyst. As shown in Fig. 4 of JP '061, the resulting structure provides a plurality of zeolite particles 1 exposed at an outer surface of binder 3 (formed from the silica and alumina sols). The metal catalyst 5 is ion exchanged with the exposed zeolite particles 1. However, the metal catalyst is not ion exchanged with the binder 3, as discussed in more detail below.

Although the binder 3 likely forms a mixture of SiO_2 and Al_2O_3 , after firing, the metal catalyst cannot be ion exchanged therewith, but rather, is ion exchanged only with the zeolite particles 1 as shown in Fig. 4 of JP '061. The exclusive ion exchange with zeolite particles 1 can be explained by looking to the crystal structure of zeolite. As is well known in the art, zeolite is a unique crystalline aluminosilicate, which has a peculiar 3-dimensional network structure in which SiO_4 tetrahedral units are bonded by oxygen atoms and Al^{3+} ions are substituted for some of the Si^{4+} ions. For charge compensation, cations (e.g., H^+ , Na^+ , Ca^{2+} , Cu^{2+} , Pt^{4+} , etc.) are present around the Al^{3+} ions. These cations may be reversibly ion exchanged with the metal catalyst as described by JP '061. Since the binder 3 (containing a mixture of SiO_2 and Al_2O_3) does not have a zeolite structure, the metal catalyst cannot ion exchange therewith. Accordingly, the metal catalyst is not loaded on the binder. Thus, it is quite clear that JP '061 fails to disclose all features of the presently claimed invention.

The PTO has taken an alternative position that the presently claimed invention would have been obvious over Inoue et al. or JP '061. However, the art of record provides absolutely no motivation to modify the zeolite catalysts of the applied references to include a heat-resistant oxide loaded with a noble metal. Indeed, the PTO has not articulated any such position, but has merely made an overly broad argument that it would have been

obvious to the artisan to use the same composition as presently claimed. Absolutely no support is found in the record to support this position.


For at least the foregoing reasons, applicants respectfully submit that all features of the presently claimed invention are not disclosed or even remotely suggested by the applied references. Accordingly, reconsideration and withdrawal of the § 102/§ 103 rejection over Inoue et al. or JP '061 are respectfully requested.

Applicants respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims.

Should the Examiner deem that any further action by the applicants would be desirable for placing this application in even better condition for issue, the Examiner is requested to telephone applicants' undersigned representative at the number listed below.

Respectfully submitted,

Date: 6/20/95


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Attachment:

English-language Translation of JP '061
(JP Application No. 62-292914)